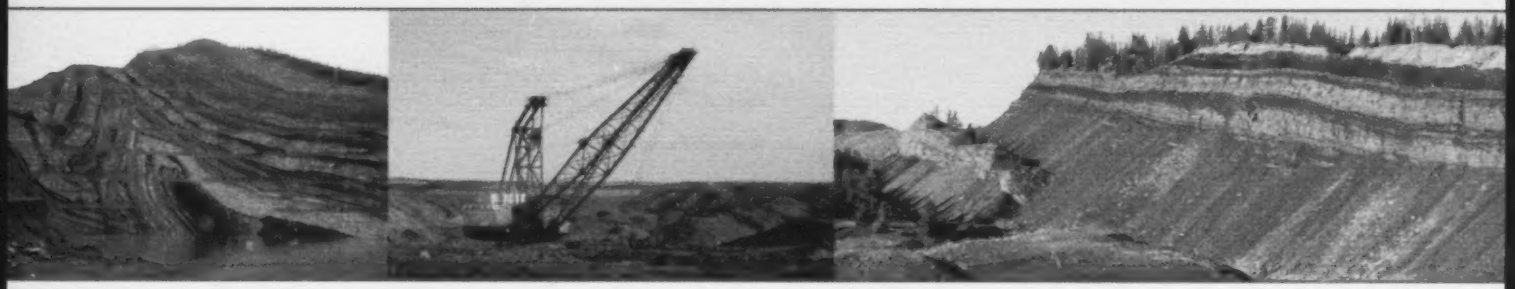
Coal and Mineral Development in Alberta
2014 Year in Review



Coal mining and projects
Metallic and industrial mineral activity
Land-use planning
Industrial mineral and coal production and royalty
Subsurface reservoir storage

Alberta

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All Alberta Acts and Regulations are available online:
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The information contained within this report has been collected from publicly available government information, company websites, press releases, and reports filed on Sedar (www.sedar.com). All figures quoted are current as of the time of publication. Please consult the company websites for specific information regarding any projects outlined in this report. Any other references are noted within the document. The authors make no warranty of any kind with respect to the content and accept no liability, either incidental, consequential, financial or otherwise, arising from the use of this document.

Cover photos
Left: Cardinal River coal mine, courtesy Alberta Geological Survey
Centre: dragline at Genesee coal mine, courtesy Alberta Geological Survey
Right: Grassy Mountain coal project, courtesy Riversdale Resources.

Introduction

While overall activity decreased in Alberta in 2014, there was significant work completed on a number of metallic and industrial mineral, and coal projects. Companies with available capital are continuing to develop projects in preparation for better market conditions.

Exploration activities continue to target a variety of metallic and industrial minerals; however, the interest in silica sand as a source for frac sand has increased significantly. With the identification of potential sources within both surface and subsurface deposits, companies have been looking to capitalize on the growing need for frac sand in Alberta and northeast British Columbia.

There was progress on the development of new coal mine projects as well as an expansion of an existing coal mine. Most coal-related activity relates to bituminous coal in the foothills and front ranges in the Eastern Slopes.

The development and implementation of Alberta's Land-use Framework continued through 2014. This includes widespread involvement from a variety of government departments, stakeholders, and industry. Currently, the Lower Athabasca Regional Plan is being implemented, the South Saskatchewan Regional Plan is approved, and the North Saskatchewan Regional Plan is in development.

Metallic and industrial minerals

In 2014 the mineral exploration industry faced another year of challenges due to low metal prices and lack of capital. Mineral exploration in Alberta continued to be limited; however, work advanced on an iron project in the Peace River area and land acquisition and exploration for uranium in northeastern Alberta increased. The area held under metallic and industrial mineral permits fell for a third straight year, continuing the five year trend (Figure 1). The area under metallic and industrial mineral lease increased slightly from the previous year (Figure 2). The number of active metallic and industrial mineral licences increased again in 2014, continuing the five-year trend (Figure 3).

Metallic and Industrial Minerals Permits

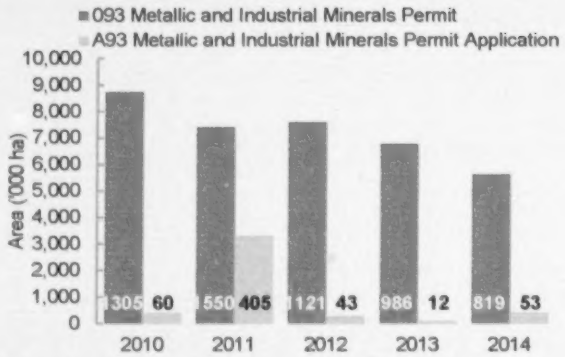


Figure 1. A bar graph with the total area of metallic and industrial minerals permits and permit applications from 2010 through 2014 (the report period is October 1 through September 31). Numbers at the base of the bars indicate the number of individual permits or applications.

Metallic and Industrial Minerals Leases

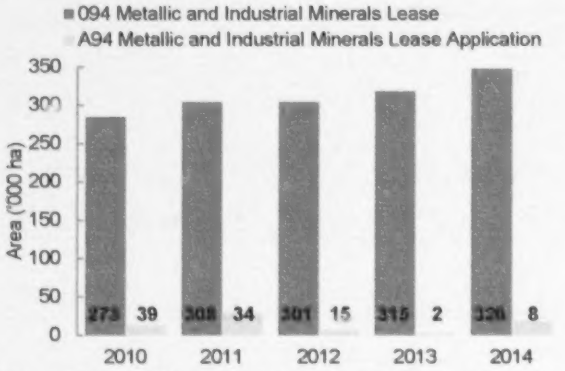


Figure 2. A bar graph with the total area of metallic and industrial minerals leases and lease applications from 2010 through 2014 (the report period is October 1 through September 31). Numbers at the base of the bars indicate the number of individual leases or applications.

Although the number and area of permits submitted for assessment is at a five-year low, the total expenditures accepted are up from 2013. Except for the large peak in 2012, 2014 had the highest expenditures filed and accepted in the past five years (Figure 4).

2014 metallic and industrial mineral exploration highlights

Polymetallic Shale

In late 2013, **DNI Metals Inc** (*www.dnimetals.com*) released a Preliminary Economic Assessment (PEA) for the **Buckton** polymetallic black shale project located approximately 120 kilometres north of Fort McMurray. The PEA outlines a conceptual mine plan that considers production of 450 tonnes of uranium yellowcake and 5,500 tonnes of rare earth oxides in addition to zinc, nickel, copper, cobalt and yttrium. In 2014, the company assessed the potential for adding a recovery circuit for scandium oxide.

Iron

Ironstone Resources Ltd (*www.ironstoneresources.com*) continued to advance its **Clear Hills** iron-vanadium project, located approximately 80 kilometres northwest of Peace River in northwest Alberta. Ironstone's intent is to form the iron oxide ore into high-value, uniform metallic iron briquettes containing at least 90 percent iron for easy shipment. A vanadium pentoxide (V_2O_5) byproduct can also be recovered.

Ironstone completed two process metallurgical campaigns designed to test the iron reduction process. The initial recovery was targeted at 80%. Reported results are positive with 90 percent or greater metallization after reduction. The metallized samples were then magnetically separated resulting in a Direct Reduced Iron (DRI) concentrate consisting of 90% iron (Fe), 0.12% phosphorous (P), and 0.3% carbon (C).

The company is conducting further mineral processing tests and is working on a Preliminary Economic Assessment.

Ironstone's Clear Hills project is an oolitic ironstone deposit hosted in the Cretaceous Bad Heart formation.

Metallic and Industrial Minerals Licences

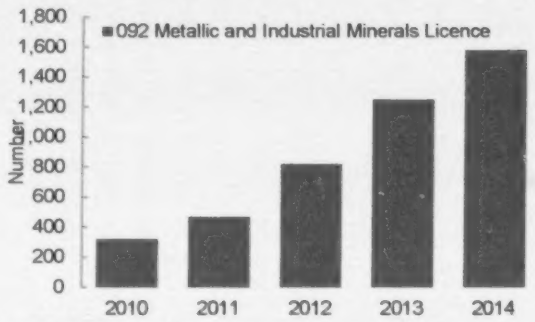
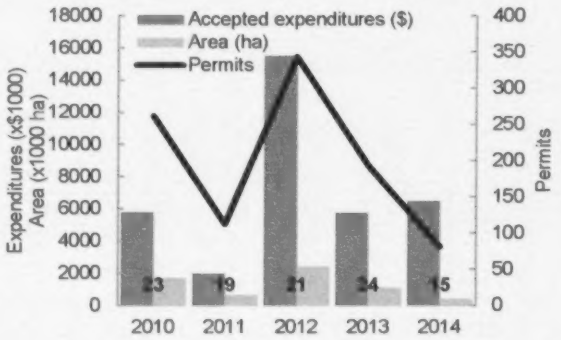


Figure 3. A bar graph with the total number of active metallic and industrial minerals licences from 2010 through 2014 (the report period is October 1 through September 31).

Assessment Report Expenditures



Year	Reports	Permits	Area (ha)	Accepted expenditures ($)	Payment in lieu
2010	23	261	1,690,880	$5,772,404	$0
2011	19	112	642,758	$1,953,248	$39,712
2012	21	343	2,392,416	$15,510,795	$0
2013	24	193	1,101,370	$5,746,824	$0
2014	15	81	391,064	$6,463,459	$0

Figure 4. A graph of mineral assessment report statistics for 2010 through 2014. The number of permits and area are those reported in submitted reports. The accepted expenditures are those accepted by Alberta Energy; the total amount claimed is not reported, but is higher than the accepted expenditure value. Accepted values for 2014 are preliminary because not all report reviews were completed at the time of publication. Numbers at the base of each bar are the number of reports received.

Uranium

Uranium exploration activity increased in Alberta in 2014. The Athabasca Basin, which straddles the Alberta-Saskatchewan border, produces about 15 percent of the world's uranium for energy. Most of the significant uranium discoveries to date and all the operating uranium mines are located on the Saskatchewan side of the basin. In 1988 high grade uranium was found in northeast Alberta in the Dragon Lake area, on the far west side of the Athabasca Basin. The Alberta Geological Survey reports that one intersection in the Dragon Lake area along the Maybelle River shear zone has 21% U_3O_8 over five metres and another intersection of up to 54.5% U_3O_8. The potential exists for additional uranium discoveries in the Alberta side of the Athabasca Basin.

Declan Resources Inc (*www.declanresources.com*) continued work on their **Firebag River** property located about 100 kilometres northeast of Fort McMurray. In April 2014, Declan announced that it purchased 100 percent interest in five uranium properties in northeastern Alberta: Archer Lake, Jackfish Creek, Maurice Creek, Maybelle North and Richardson River.

A 1004 line kilometre airborne electromagnetic (EM) geophysical survey over the **Maybelle North** and **Richardson River** properties identified four electromagnetic trends for follow-up. The company plans to conduct ground geophysical programs in early 2015, followed by exploration drilling. In November 2014, Declan announced it has completed a 1,326.5 line kilometre high-resolution magnetic and radiometric survey of its **Maurice Creek** property.

The Maurice Creek property encompasses 27,500 hectares immediately northwest of Cameco Corporation's Northwest Athabasca Project which is host to the Maurice Bay uranium deposit.

In August 2014, Declan announced it acquired an option to purchase additional uranium properties within the Athabasca Basin, including two in Alberta.

In 2013 **Brazil Resources Inc** (*www.brazilresources.com*) acquired the **Rea** uranium property through a corporation transaction. The Rea project is controlled 75% by Brazil Resources and 25% by Areva Resources Canada Inc and is located 185 kilometres northeast of Fort McMurray, Alberta in the western portion of the Athabasca Basin. The Rea property surrounds the high-grade Maybelle (Dragon Lake) uranium occurrence.

In September 2014, Brazil Resources announced the findings from an independent report that describes the historical uranium exploration work on the property and presents a recommended six hole, 2,600 metre drill program exploration program focused on the North Zone and the West Zone.

In March, 2014 **Fission 3.0 Corporation** (*www.fission3corp.com*) released a Technical Report on their **North Shore** uranium property

Panarc Resources (*www.panarc-resources.com*) holds the West Basin Uranium property in northeast Alberta. Previous exploration work by Esso Minerals in the 1970s included lake-bottom sediment and lake water sampling, reflection seismic and gravity surveying. Panarc is recommending a program of detailed gravity and electromagnetic surveys followed by target-specific seismic reflections surveys to identify potential drill targets on the property.

In late 2013 **Vulcan Minerals Inc** (*www.vulcanminerals.ca*) acquired 10 metallic and industrial mineral permits approximately 50 kilometres east of Fort McMurray. The exploration target is Athabasca Basin style uranium deposits. In February 2014, the company released an evaluation report on the uranium potential of the property including recommendations for a two phase exploration program.

Diamonds

The Buffalo Head Hills group of kimberlites in Alberta is the third largest district of diamond-bearing kimberlites in Canada, yet it remains underexplored. The Buffalo Head Hills Joint Venture consortium (Canterra Minerals Corporation, Shore Gold Inc, and Encana Corporation) holds the largest ground position in the area. To date, a total of 26 diamond-bearing kimberlites have been discovered on the property. The diamonds are generally of high quality. Given the renewed interest in diamond exploration this year, there may be increased interest in exploration for diamonds in Alberta.

Grizzly Discoveries Inc (*www.grizzlydiscoveries.com*) announced in June 2014 that they acquired additional metallic and industrial mineral permits for their **Alberta Diamond** project, which is located in the Buffalo Head Hills area of north-central Alberta. The Alberta Diamond project now covers 92,025 hectares (227,399 acres) of the Buffalo Head Hills kimberlite field. Grizzly plans to conduct new detailed ground geophysical surveys and acquire

new LIDAR and orthophoto data to aid in identifying new kimberlites, followed by bulk sampling of previously discovered kimberlites and drilling of new high priority targets. To date, Grizzly's Alberta Diamond Project hosts at least seven kimberlites, of which three contain microdiamonds.

Potash

There was a decreased level of exploration in 2014 for potash in Alberta. Grizzly Discoveries Inc announced they had a third party evaluating their **Alberta Potash** project located along the Alberta-Saskatchewan border. Drilling by Grizzly in 2011 on the Alberta Potash project property intersected up to 31.1% K_2O.

Silica sand

Companies completed a number of exploration projects to test the extent and quality of silica sand in Alberta in 2014. Sand with high silica (SiO_2) content can supply many industrial applications, including the glass industry, as filler in paint, plastics and rubber, and in foundry operations.

A particular type of high purity silica sand is in demand for use in hydraulic fracturing (fracking), where frac sand and a viscous gel and other chemicals are injected down a well under pressure. The pressure fractures the oil-bearing formation and the sand particles prop open fractures to increase oil and natural gas flow to the well head. A single well may use many tonnes of frac sand to extend the life of the reservoir.

DNI Metals added additional metallic and industrial mineral permits to its polymetallic project located approximately 120 kilometres north of Fort McMurray to claim exposures of sandstone with frac sand potential. Twenty two samples were collected from trenches and exposures of the Pelican sandstone formation and examined to see if they meet frac sand specifications.

Declan Resources evaluated the frac sand potential on their Firebag River property, in addition to pursuing uranium exploration. Initial laboratory results on frac sand samples from the property show high silica content, quality sphericity and roundness values, and a high percentage of sand falling within the preferred 20/40 and 40/70 mesh sizes. In addition, the company examined cuttings and drill core from oil sands drilling, stored at the Alberta Energy Regulator core storage facility in Calgary, to document the continuity of high-grade frac sand at or near surface.

Athabasca Minerals Inc (*www.athabascaminerals.com*) is developing its **Firebag** frac sand deposit to supply frac sand to oil and gas customers in Western Canada. The project is located 95 kilometres north of Fort McMurray. The company proposes to develop a 32 hectare parcel as the first development of the overall 202 hectare Firebag silica sand project. The second phase of the project includes planning the development of a larger 169 hectare parcel.

A National Instrument (NI) 43-101 Technical Report was released in September 2014; it outlines an Inferred mineral resource of 45 million tonnes of silica sand on the first phase of the project. A Preliminary Economic Assessment is underway.

Athabasca received approval from Alberta Environment and Sustainable Resource Development for phase one of the project. This approval grants the right to work and remove surface materials. Approval is pending for additional permits. Anticipated initial production is scheduled for 2016.

Rainmaker Resources Ltd (*www.rainmakerminingcorp.com*) entered into an option agreement to acquire the **Peace River** frac sand property from **Zimtu Capital Corporation** (*www.zimtu.com*) and 877384 Alberta Ltd. The property is located adjacent to the Peace River frac sand quarry owned and operated by **Canadian Silica Industries** (*www.laprairiegroup.com/companies/canadian-silica-industries*). Rainmaker carried out mapping and sampling of sandstone outcrops on the property this past summer, but decided not to continue with their option.

Victory Mountain Ventures Ltd entered into an option agreement in 2014 to earn an interest in the **Ells** frac sand property located 95 kilometre from Fort McMurray in northeast Alberta. The company compiled stratigraphic information to construct a 3-D model of the property.

In October 2014 **CanAm Coal Corp** (*www.canamcoal.com*) signed a Letter of Intent to acquire a 100 per cent interest in a frac sand property located in Alberta.

Industrial Minerals

Athabasca Minerals completed detailed core logging and sampling from drilling completed in

2013 and 2014 on its **Richardson** project located 130 kilometres north of Fort McMurray. High quality dolomite and granite are being evaluated for their use in concrete, asphalt and road base applications.

In 2014 Athabasca Minerals entered into a joint venture agreement with **Wood Buffalo Metis Corporation** to explore for, develop, and market potential sources of aggregate, including granite, dolomite, limestone, and silica sand.

Salt

Athabasca Minerals acquired three additional metallic and industrial mineral permits in 2014 to increase its holdings covering the Lotsberg salt formation near Boyle, Alberta.

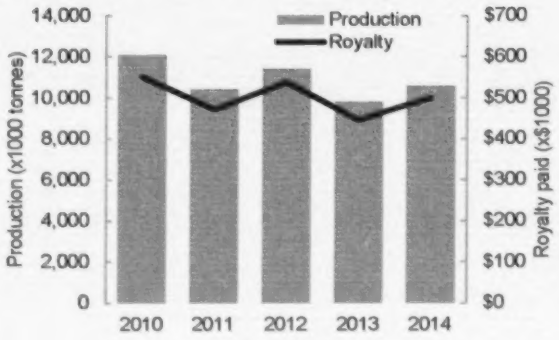
Further north, on its **Dover** project, Athabasca acquired an additional metallic and industrial mineral permit adjacent to their existing leases that cover a salt formation; the company is evaluating the formation for its chemical and storage cavern potential. The Dover project is located about 150 kilometres north of Fort McMurray.

Heavy minerals

Titanium Corporation (*www.titaniumcorporation.com*) continued work on their process for extracting heavy minerals and residual bitumen from oil sands tailings. The company completed a heavy minerals bulk sample program designed to facilitate recovery of commercial volumes of zircon and titanium concentrate. In addition, the company commissioned a report on the marketability of the zircon and titanium products.

For additional information about metallic and industrial permits and leases that did not report active exploration in 2014, go to Alberta Energy's online interactive map: *www.energy.alberta.ca/OurBusiness/1072.asp*.

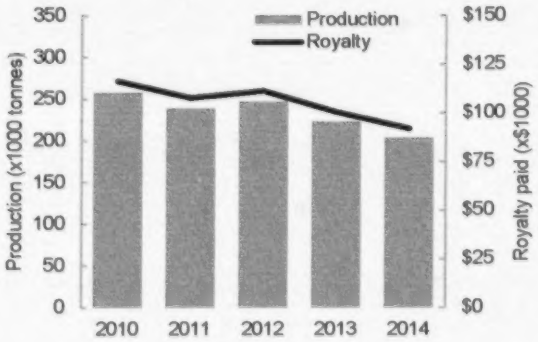
Quarriable Mineral Production



Year	Production	Royalty
2010	12,078,733	$551,439
2011	10,423,433	$471,404
2012	11,399,983	$537,621
2013	9,794,655	$445,496
2014	10,583,127	$500,671

Figure 5. The total quarriable mineral production and royalty collected for the last five years, including 2014. The report period is from October 1 to September 31.

Salt Production



Year	Production	Royalty
2010	257,935	$116,071
2011	239,061	$107,577
2012	246,968	$111,136
2013	222,631	$100,184
2014	203,659	$91,647

Figure 6. The total salt production and royalty collected for the last five years, including 2014 The report period is from October 1 to September 31.

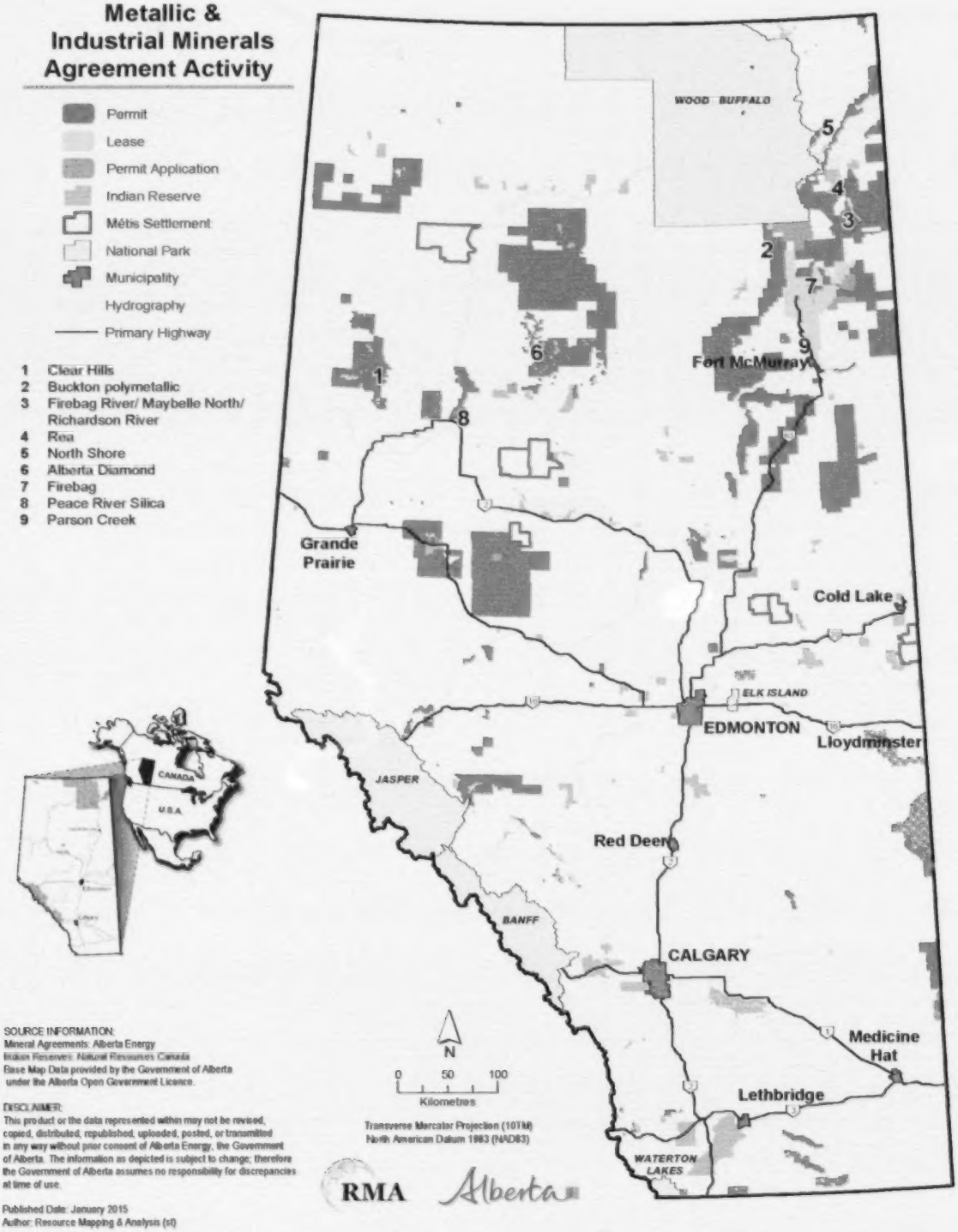


Figure 7. A map of Alberta showing metallic and industrial mineral tenure activity as of January 2015. An interactive, real-time version of this map is available at www.energy.alberta.ca/OurBusiness/1072.asp

2014 industrial mineral quarry activities

Production and royalty

The production of quarriable minerals (including limestone, dolomitic siltstone, sandstone, and silica sand) compares to the average over the last five years; salt production is slightly down from 2013, which continues the five-year trend (Figure 5 and 6). The most significant quarriable mineral production during this five year period is limestone. Salt production, from the Devonian Elk Point Group, is from in situ leach operations (rather than traditional mining methods).

Table 1 lists all operating industrial mineral quarries in Alberta.

Limestone

The Natural Resources Conservation Board (NRCB; *https://nrp.nrcb.ca*) released decision NR 2014-01 in February 2014. This decision concluded that the Parsons Creek Aggregate quarry project is in the public interest. The quarry is operated by **Parsons Creek Aggregates** (*www.parsonscreekresources.com*), which is a joint venture between Graymont Western Canada (*www.graymont.com*) and Inland Cement (*www.lehighhansoncanada.com*). It is located between Highway 63 and the Athabasca River just north of Fort McMurray (Figure 7). The company plans to quarry 58 Mt of limestone over a 40 year period.

Industrial Mineral Quarries

Mine/Quarry	Commodity	Location	Operator
Calling Lake*	Salt	North of Athabasca	Calcium Inc.
Clearwater	Limestone	Rocky Mountain House	Burnco Rock Products Ltd.
Cougar Ridge	Limestone	Rocky Mountain House	Prairie Creek Quarries Ltd.
Exshaw	Limestone	Exshaw	Lafarge Canada Ltd.
Fish Creek	Limestone	Nordegg	Graymont Western Canada Inc.
Fort Hills	Limestone	North of Fort McMurray	Hammerstone Corporation
Fort McMurray West	Limestone	Fort McMurray	Suncor Energy Inc.
Gap	Limestone	Exshaw	Graymont Western Canada Inc.
McLeod	Limestone	Cadomin	Lehigh Hanson Materials Ltd.
Mitsue*	Salt	Slave Lake	Tiger Calcium Services Inc.
Muskeg	Limestone	North of Ft McMurray	Hammerstone Corporation
Peace River Silica	Silica Sand	Peace River	Contractors Leasing Corp.
Riverview*	Salt	Riverview	The Canadian Salt Company Ltd.
Rundle Stone	Dolomitic Siltstone	Canmore	Kamenka Quarries Ltd.
Seebe	Shale	Kananaskis	Lafarge Canada Ltd.
Sprayfalls	Sandstone	Exshaw	Thunderstone Quarries Ltd.
Steepbank	Limestone	North of Fort McMurray	Hammerstone Corporation
Summit Lake	Limestone	Coleman	Graymont Western Canada Inc.
Sunnynook*	Salt	Drumheller	Jarodon Resources Ltd.
Vicory	Sandstone	Coleman	Pat Dwyer Construction Inc
Yamnuska	Sandstone	Kananaskis	Lafarge Canada Ltd.

Table 1. A table of the active industrial mineral quarries in Alberta; there are no metallic mines. *Salt is produced through in situ leaching from the Elk Point group.

Coal

The total area and number of coal leases in the province remained relatively constant from 2013 to 2014 (Figure 8). The area under coal lease application increased (Figure 8). Whereas interest in 2012 and 2013 was focused on acquiring new coal rights, 2014 saw companies explore and document coal resources on properties acquired in previous years. See Figure 9 for a map of Alberta's coal fields, coal ranks, mines, and projects.

2014 coal exploration highlights

In September 2013, **Altitude Resources Ltd** (*www.altituderesources.ca*) reported a NI 43-101 resource estimate on the **Elan property** comprising a 62.14 million tonne indicated resource and an 84.72 million tonne inferred resource. The resource calculation is based on historical exploration, including 82 rotary drill holes, 127 core holes, 19 adits, and 21 coal bed methane wells.

This past summer, Altitude completed an exploration program consisting of seven drill holes (four core and three rotary holes) and seven trenches. Exploration was focused on specific coal quality analysis (historical analysis indicates a rank of mid-volatile bituminous). Once analytical results are completed in 2015, Altitude plans to issue an updated NI 43-101 resource estimate.

In November, Altitude Resources, **Elan Coal Ltd** (*www.elancoal.com*), and **Kuro Coal Ltd** (*www.atrumcoal.com*) announced a joint venture agreement for the Elan property. Under the agreement, Kuro Coal becomes the project operator and can earn up to 70 per cent interest in the property by meeting defined agreement milestones, including drilling, pre-feasibility and feasibility studies. Altitude Resources and Elan Coal would retain 12.5 per cent and 17.5 per cent interest, respectively, if they meet the terms of the agreement with Altitude.

Coal Leases

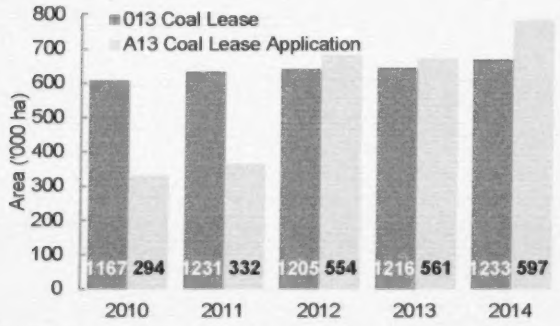


Figure 8. A bar graph with the total area of coal leases and lease applications from 2010 through 2014 (the report period is October 1 through September 31). Numbers at the base of the bars indicate the number of individual leases or applications.

The Elan property is located approximately 15 kilometres north of the Municipality of Crowsnest Pass. It is made up of 27 coal lease applications covering an area of 23,000 hectares.

Altitude Resources also continued work on their **Palisades property** located north of the town of Hinton. Following a drill program in fall 2013, Altitude Resources announced a NI 43-101 coal resource estimate in February. They report a 10.1 million tonne Measured and Indicated resource and a 4.9 million tonne Inferred resource of low-volatile bituminous coal.

Riversdale Resources (*www.rivresources.com*) continued work on the **Grassy Mountain** project in the Crowsnest Pass. In November 2014 the company released an Environmental Impact Assessment Proposed Terms of Reference for the project. The purpose of the report is to identify information required by government regulators for an Environmental Impact Assessment (EIA). This is preparation for the development of a full EIA as a major step toward project approval.

In addition, the company is preparing a feasibility study for the project. Current estimates are for the mine to produce two to four million tonnes of metallurgical coal per year over a 28 year life. If development proceeds as planned, Riversdale anticipates mining operations would begin in 2018.

Operated by the wholly owned-subsidiary **Benga Mining**, the Grassy Mountain coal mine project sits on both Crown and privately-held coal rights. It is located within the Crowsnest Pass in southwest Alberta. The proposed mine and coal processing plant is located seven kilometres north of the community of Blairmore.

2014 coal mine activities

Production and Royalty. Bituminous coal production has remained constant over the last four years. Because of lower net revenues reported by producers, royalty payable has decreased over the same period (Figure 10). The total subbituminous coal production also remained about the same

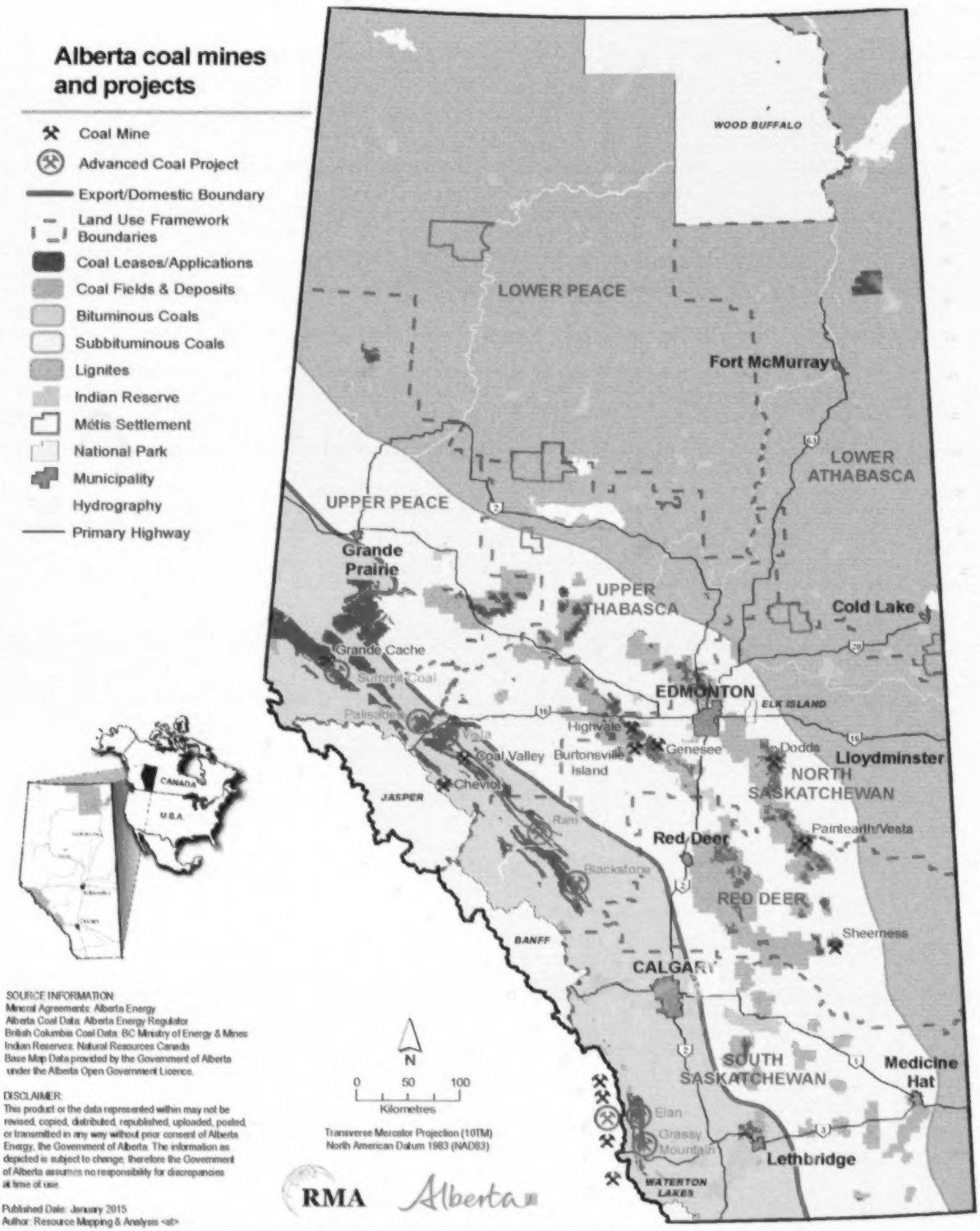


Figure 9. A map of Alberta showing coal tenure activity (dark brown), and coal mines and projects, as of January 2015. Coal fields (light brown) and approximate coal rank distribution (coloured bands) are also shown. An interactive, real-time version of the coal tenure on this map is available at www.energy.alberta.ca/OurBusiness/1072.asp.

in 2014 as the previous four years (Figure 11). The proportion of production from Crown-owned coal is higher over the last four years, which has resulted in an elevated amount of royalty collected by the Crown relative to 2010. In 2014, there was a marked increase from a 10 per cent increase in production from Crown rights.

Table 2 lists all operating coal mines in Alberta.

Grande Cache Coal Mine

In October 2014, **Up Energy Development Group** (*www.upenergy.com*) purchased **Grande Cache Coal Corporation** (*www.gccoal.com*) for a total of $2. After purchasing the company in 2011 for $1 billion, **Winsway Coking Coal Holdings Ltd** (*www.winsway.com*) and **Marubeni Corporation** (*www.marubeni.com*) announced they would each sell interest in Grande Cache for $1. Winsway will retain 17 per cent interest and both companies retain an option to re-purchase interest at a later date.

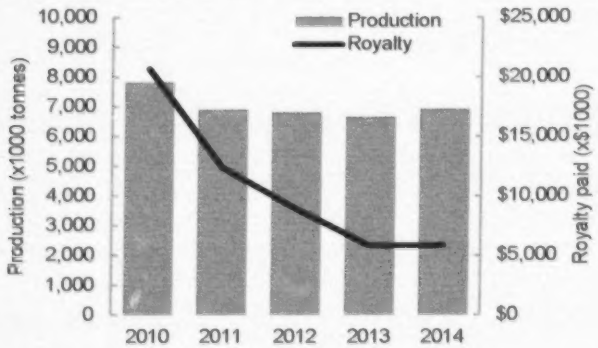
Up Energy is a Chinese coking coal producer based in Xinjiang province in northwest China.

At the beginning of January 2015, Grande Cache announced it would be ceasing coal production from surface operations in February. The company will focus on production from the mine's underground operations.

Vista Project

In February 2014 the Alberta Energy Regulator (AER) granted project approval for the **Vista mine project** to **Coalspur Mines Limited** (*www.coalspur.com*). The approval includes several conditions that the operator must meet for the project, including for the coal processing plant, mine plan, end-pit lake, geotechnical investigations, fines management, surface water quality, wetland, wildlife management, and noise mitigation. Subsequently, Coalspur received four additional approvals in August and October:

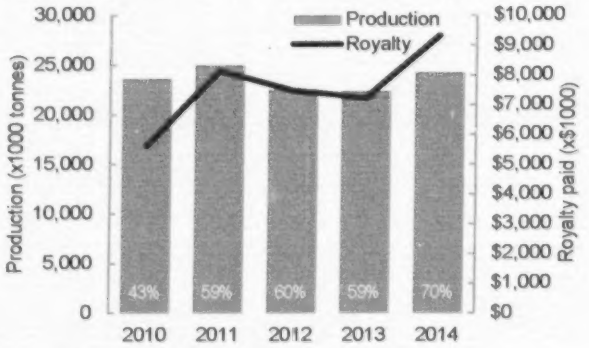
Bituminous Coal Production



Year	Production	Royalty
2010	7,808,400	$20,628,221
2011	6,898,123	$12,325,969
2012	6,805,148	$8,892,626
2013	6,653,820	$5,775,640
2014	6,915,435	$5,826,830

Figure 10. The total bituminous coal production and royalty collected for the last five years, including 2014. The report period is from October 1 to September 31.

Subbituminous Coal Production



Year	Production	Crown %	Royalty
2010	23,583,193	43%	$5,604,637
2011	24,938,975	59%	$8,124,111
2012	22,483,777	60%	$7,463,258
2013	22,288,559	59%	$7,209,349
2014	24,230,326	70%	$9,314,753

Figure 11. The total subbituminous coal production and royalty collected for the last five years, including 2014. The percentages are the portion of the production from Crown coal rights. Alberta Energy does not collect royalty on freehold coal production. The report period is from October 1 to September 31.

- An *Environmental Protection and Enhancement Act* (EPEA) approval for construction, operation, and reclamation.
- A *Water Act* approval for activities pursuant to constructing, operating, maintaining, and reclaiming Vista.
- A licence under the *Water Act* to operate works and to divert a limited amount of ground water and surface water annually.
- A Mineral Surface Lease under the *Public Lands Act*.

Coalspur released an updated NI 43-101 technical report for Vista and nearby Vista South in July. This report was completed by Snowden Mining Industry Consultants Inc and is available from the Coalspur website or Sedar (*www.sedar.com*).

The main hurdle facing Coalspur currently is securing the funding to proceed with construction of the mine. Low coal prices are making it especially difficult. This has caused Coalspur to delay the start of construction, which was previously set at July 2014.

Coal Valley mine expansion

The **Westmoreland Coal Company** (*www.westmoreland.com*) is continuing with the expansion of the **Coal Valley** mine. The expansion is into the Robb Trend, which is a northwest-southeast trending coal seam to the east of the existing mine operations. The project is located near the hamlet of Robb in the Coal Branch of the Rocky Mountain Foothills. The mine will continue to utilize existing coal processing facilities for production from new mining operations.

In October 2014, the Federal Minister of Environment referred the **Robb Trend** coal mine expansion project to a joint federal-provincial environmental assessment review panel. This joint review panel will be in cooperation with the Alberta Energy Regulator, who is responsible for the regulation of coal mining in Alberta.

With the announcement, the Federal Minister of Environment set timelines for the joint review:

- Pre-panel phase: 150 days from the referral to a panel to establish the panel.

Coal Mines

Mine	Coal rank	Location	Owner/Operator	Main use
Burtonsville	Subbituminous	Burtonsville	Keephills Aggregate Company Inc.	Small-scale sales
Cheviot (Cardinal River)	Bituminous	Hinton	Teck Coal Ltd.	Export: metallurgical
Coal Valley	Bituminous	Hinton	Westmoreland Coal Co.	Export: thermal
Dodds	Subbituminous	Ryley	Dodd's Coal Mining Company Ltd.	Small-scale sales
Genesee	Subbituminous	Warburg	Capital Power LP / Westmoreland Coal Co.	Electricity: Genesee generating stations
Grande Cache	Bituminous	Grande Cache	Grand Cache Coal Corp	Export: metallurgical
Highvale	Subbituminous	Wabamun	Transalta Corp / SunHills Mining LP	Electricity: Keephills and Sundance generating stations
Paintearth/Vesta	Subbituminous	Forestburg	Westmoreland Coal Co.	Electricity: Battle River generating stations
Sheerness	Subbituminous	Hanna	Westmoreland Coal Co.	Electricity: Sheerness generating stations

Table 2. A table of the active coal mines in Alberta.

- Panel phase: 430 days from the establishment of the panel for the panel to submit their final report.
- Post-panel phase: 150 days from the date of submission of the panel's report the Federal Minister of Environment must make a decision on the project.

The timelines do not include the time for Westmoreland to gather information for the review.

To support participation in the public review, the Canadian Environmental Assessment Agency announced in December that they will allocate $627,436 to 11 applicants. The applicants include 10 First Nations groups and a local association from the hamlet of Robb.

In Situ Coal Gasification (ISCG)

There was no significant work done in 2014 with respect to developing in situ coal gasification. The most advanced project in the province, **Swan Hills Synfuels'** pilot project, has been on hold since late in 2011.

CMD Updates

Activities

Roundup and PDAC. Representatives from the Coal and Mineral Development (CMD) branch of Alberta Energy hosted booths at the Mineral Exploration Roundup (Roundup) in Vancouver and the Prospectors and Developers' Association of Canada (PDAC) convention in Toronto, in 2014. These conferences provide Alberta Energy an opportunity to disseminate information about Alberta, its resources, mineral rights, and other related topics. They also provide an opportunity for those interested in Alberta to make a direct connection.

Coal Association of Canada Conference. CMD hosted an information booth focussing on Alberta's coal tenure and royalty regimes as well as investment opportunities at the annual Coal Association of Canada's Annual Conference and Tradeshow held in Vancouver during mid-September.

China Mining Conference and Investment Forums. Alberta Energy participated for the second time as a full participant with a Canadian delegation to the annual China Mining Conference and Exhibition *(www.china-mining.org/en/index.aspx)* in Tianjin, China, and Canada Mineral Investment forums in Beijing and Shanghai, China, and Tokyo, Japan.

The trip was successful solidifying new connections and continued to build on established relationships in Asia. Alberta also helped arrange mineral investment forums where companies working in Alberta met investors based in China and Japan. Support for the trip was provided by the Alberta offices in Beijing and Tokyo. Although the economic downturn meant fewer companies were able to join the trip than in previous years, there was very good reception for those that were there.

Other jurisdictions that were part of the Canadian delegation were British Columbia, Yukon, Saskatchewan, Quebec, Newfoundland and Labrador, and the federal government.

Mineral Assessment Reports

All assessment reports submitted to Alberta Energy are subject to a confidentiality period of one year. The most recent reports will not be available on the website until after this period.

Non-confidential mineral assessment reports housed by Alberta Energy are available on the Alberta Energy website: *www.energy.alberta.ca/minerals/3441.asp*. Reports dating back to 1949 have been scanned and are available for viewing and printing in PDF format at no charge.

Mineral assessment reports are required by Alberta Energy for a permittee to maintain a Metallic and Industrial Minerals Permit. Every two years, a permittee must supply a report that documents the exploration work they did during the previous two-year period and that they expended the required amount of money doing so. Assessment reports are the record of the exploration work that is done by permit holders.

Interactive maps

There are online interactive maps available on the Alberta Energy website to show up-to-date tenure information for ammonite shell, coal, and metallic and industrial minerals. The data is updated nightly. The maps are a very important tool for those interested in applying for mineral rights.

Data from the ammonite shell, coal, and metallic

and industrial minerals maps are available for download. The maps are located on the Alberta Energy website: *www.energy.alberta.ca/OurBusiness/1072.asp*. There is an easy to use tutorial available, accessed by selecting the help button when in the map.

Legislation

Subsurface Reservoir Lease

On September 3, 2014, Cabinet approved (OC 364/2014) amendments to the Metallic and Industrial Minerals Tenure Regulation (AR 145/2005) to create a new lease type: Subsurface Reservoir Lease (SRL). These new leases will be used to issue storage rights in subsurface salt caverns.

Previously, the right to store a substance in subsurface salt caverns was granted as a Special Mineral Lease. The authority to do this is through section 9(b) of the *Mines and Minerals Act*, which allows the Minister to enter into an agreement that vary from the Act or any regulations with the approval of the Lieutenant Governor in Council (i.e. Cabinet).

The SRL grants the exclusive right to store a specified substance (e.g. natural gas, petroleum liquids, crude oil, and petroleum waste) in a subsurface reservoir, as well as to create a cavern in salt for the purpose of storage. Because the rights are now granted through regulation, Cabinet approval is no longer required. All other administrative processes will remain the same. During 2015 additional information will be released regarding the new leases. In the meantime, applications for a Subsurface Reservoir Lease should be submitted as a letter that states the location, formation, and substance to be stored.

Annual rental for a Subsurface Reservoir Lease is $12.50 per hectare. Each lease will be limited to one section and a $625 application is due for each application.

New publications

Alberta Geological Survey

The Alberta Geological Survey (AGS) released new bedrock geology maps for Alberta and the Alberta Rocky Mountains. Maps and all other publications are available for free from their website: *www.ags.gov.ab.ca*.

Energy Briefing Note: The Ultimate Potential for Unconventional Petroleum from the Montney Formation of British Columbia and Alberta. National Energy Board; British Columbia Oil and Gas Commission; Alberta Energy Regulator; and British Columbia Ministry of Natural Gas Development, AER/AGS Information Series 144, 2013.

Hydrogeological Field Notes by Dr. Józef Tóth: 1964-1969, Central and Southern Alberta. Tóth, J., AER/AGS Information Series 143, 2014.

Outcrops of the Lower Waterways Formation (Firebag and Calumet Members) on the Clearwater, Athabasca and Firebag Rivers, Alberta (NTS 74D, E). Schneider, C.L., Grobe, M., Hein, F.J., Leighton, L.R., and Forcino, F.L., AER/AGS Open File Report 2014-08, 2014.

Compilation of Boreholes Drilled or Logged by the Alberta Geological Survey. Waters, E.J. and Andriashek, L.D., AER/AGS Open File Report 2014-06, 2014.

Regional Correlation of the Beaverhill Lake Group in the Subsurface of Alberta, Townships 29 to 113 and Ranges 1W4 to 13W6. Hauck, T.E., AER/AGS Open File Report 2014-05, 2014.

Geological Characterization of the Lower Clearwater Shale in the Athabasca Oil Sands Area, Townships 87-99, Ranges 1-13, West of the Fourth Meridian. Haug, K., Greene, P., and Mei, S., AER/AGS Open File Report 2014-04, 2014.

Subsurface Stratigraphic Picks for the Milk River 'Shoulder', Alberta Plains: Including Tops for the Milk River Formation and Alderson Member of the Lea Park Formation. Glombick, P.M. and Mumpy, A.J., AER/AGS Open File Report 2013-17, 2014.

A Review of the Potential Correlation between Low-Magnitude Earthquakes and Oil and Gas Industry Activity in Alberta. Haug, K., Dongas, J.M., and Warren, J.E., AER/AGS Open File Report 2013-16, 2014.

Regional Cross-Sections of Devonian Stratigraphy in Northeastern Alberta (NTS 74D, E). Schneider, C.L. and Grobe, M., AER/AGS Open File Report 2013-05, 2013.

Thin Section Analysis of Core Samples from the Duvernay and Muskwa Formations and

the Majeau Lake Member in Alberta. Anderson, S.D.A., Bladek, J., and Rokosh, C.D., AER/AGS Open File Report 2013-06, 2013.

Land-use planning

Alberta Land Stewardship Act (ALSA)

The ALSA was passed on June 4, 2009 and is the legislative mechanism to implement and support the development of regional plans under the Land-use Framework (LUF).

To clarify the intent of the legislation and to reinforce the Government of Alberta's commitment to respecting the property rights of Albertans, the ALSA was amended on May 10, 2011.

Land-Use Framework (LUF)

A key strategy of the LUF is the development of seven regional land use plans (see Figure 12). Along with environmental monitoring and regulatory enhancement, regional planning is a cornerstone of the world-leading resource system that the Government of Alberta is building in Alberta. This more integrated and coordinated resource system will deliver the best economic, environmental and social benefits for Albertans today and improve competitiveness and certainty for industry for years to come.

Lower Athabasca Regional Plan (LARP)

The LARP, the first regional plan developed under the LUF, was publicly released on August 22, 2012 and the regulatory components of the plan took effect on September 1, 2012. The LARP is a forward-looking, 50-year blueprint that provides the strategic direction needed to enhance environmental management in the Lower Athabasca Region which hosts the Athabasca Oil Sands Area, the main economic driver for the region and the province.

The LARP ensures future opportunities for oil sands, petroleum and natural gas, electricity and metallic and industrial mineral development. The establishment of six new conservation areas by the LARP brings the total conserved area in the region to two million hectares or approximately 22% of the land base. Nine new recreation areas established by the LARP help address social needs, giving Albertans access to various recreational sites to enjoy year round.

Implementation of the LARP began with the establishment of the Urban Development Sub-Region (UDSR) boundaries through an Order in Council and implementation of new conservation areas and new provincial recreation areas (PRAs) designated by the LARP. This required the cancellation of oil sands agreements within the UDSR, oil sands and metallic and industrial mineral (MIM) agreements in conservation areas, and MIM agreements within PRAs. The Government has been working with affected companies throughout the process of cancellation and compensation. As of the end of 2014, all oil sands agreements within the new conservation areas have been cancelled and compensated.

Environmental management frameworks for air and surface water quality were developed as part of the LARP and those for groundwater, an updated surface water quantity management framework for the Lower Athabasca River, and a Biodiversity Management Framework are being developed based on commitments made in the LARP.

South Saskatchewan Regional Plan (SSRP)

The final SSRP came into force on September 1, 2014. Direction in the SSRP supports Alberta's Integrated Resource Management System (IRMS) by establishing clear regional outcomes, providing clear direction to land use decision-makers, and the use of monitoring to support achievement of the outcomes.

Economically, the SSRP seeks to provide certainty for industry by ensuring clear rules for access to, and development of, natural resources are in place and also ensures opportunities for the responsible development of the region's renewable energy industry in the region are maintained. The SSRP also identifies strategies to provide for more tourism opportunities, forest management, and maintaining a sustainable agriculture industry in the region.

Environmentally, to protect critical watersheds, habitats and native grasslands, the SSRP creates eight new or expanded conservation areas, including a new 54,588 hectare Castle Wildland

Land-use planning questions?
For more information regarding the LARP, SSRP, or other land-use plans, contact:

Land-use Framework Regional Planning
780-427-7707

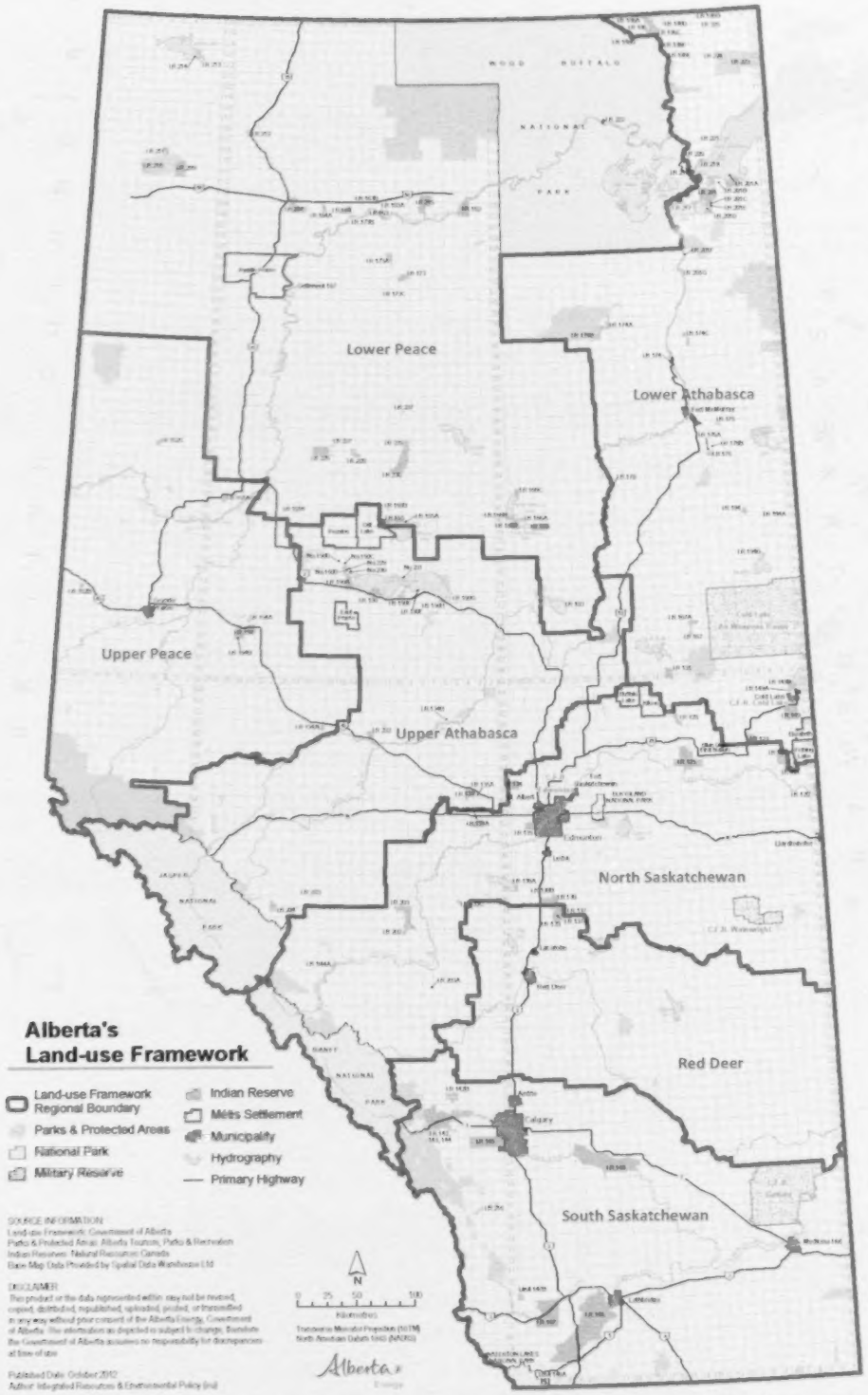


Figure 12. A map of Alberta, showing the boundaries of the regional planning areas associated with Alberta's Land-use Framework.

Provincial Park and the 34,356 hectare Pekisko Heritage Rangeland. The SSRP also establishes environmental management frameworks for ensuring air and water quality as well as a commitment to develop a biodiversity management framework.

Socially, the SSRP has identified two new and six expanded Provincial Parks to help meet growing demand for recreational opportunities and to provide a dedicated land base to support recreation and tourism development. Twelve new primitive public land recreation areas in the eastern slopes for camping and trail access are also created by the SSRP.

Implementation of the SSRP is underway. A key element of establishing the new conservation areas in the region is initiating the process of cancelling and compensating portions of coal and MIM agreements falling within the new conservation areas. It should be noted that these are historical coal and MIM agreements that existed prior to *A Policy for Resource Management of the Eastern Slopes*, released in 1977 and revised in 1984, and should have been cancelled and compensated at that time to be consistent with the management intent of Prime Protection Zones established under the Policy. The SSRP and the establishment of legally designated conservation areas ensure that this administrative oversight is addressed.

The SSRP has also directed the Government of Alberta to review the coal categories as laid out in the 1976 *A Coal Development Policy for Alberta* along with the Integrated Resource Plans in the region. The review of the coal categories will only be for the South Saskatchewan Region at this time. The intent is for the SSRP and associated tools developed under the SSRP to supersede the coal categories within the region and provide clear direction about where exploration and development of all mineral resources, including coal, can and cannot occur in the planning region.

North Saskatchewan Regional Plan (NSRP)

The Regional Advisory Council (RAC) for the NSRP concluded its series of eight meetings in various locations in the region in November 2014. The RAC was guided by a Cabinet approved Terms of Reference for the region which specified areas for the RAC to provide advice to the Government of Alberta. The RAC Advice for the NSRP is anticipated to be presented to the Government of Alberta by the end of 2014.

The Government of Alberta intends to publicly release the RAC Advice document in early 2015.

Other Regional Plans

Pre-planning work for the Upper Peace, Lower Peace, Upper Athabasca and Red Deer Regional Plans is underway.

Energy and Mines Ministers' Conference

The 2014 Energy and Mines Ministers' Conference was held August 24 to 26 in Sudbury, Ontario. The Mines session of the conference included a round table on the state of the junior mining sector in Canada. The purpose of the round table was threefold: 1) for Ministers to receive industry's perspective on the state of the junior mining sector; 2) to discuss Canada's long-term competitiveness in the mining sector; and 3) for Ministers to task provincial, territorial, and federal officials to develop a framework exploring the competitiveness of the sector.

Mines Ministers also approved two deliverables:

- The release of a compendium of good mining practices. This report's objective is to promote government, industry, and community initiatives that have yielded positive results and have improved community readiness and engagement for mining-related activities. This report included three case studies from Alberta: Coalspur Mine Limited's Community Readiness Program; the Luscar and Gregg River mines' land management plan; and Genesee coal mine reclamation.
- An update that was given on an Environmental Verification Program (EVP) pilot study, as part of the Green Mining Initiative. The pilot is investigating a process to certify mining-related technologies under Environment Canada's EVP program. The technology being tested is an on-demand ventilation system for underground mines.

These publications and others can be viewed on Natural Resources Canada website (*https://www.nrcan.gc.ca/publications/11102*)

About Alberta's regulatory system

The Crown owns 81% of the mineral rights in Alberta. The other 19% are *Freehold* mineral rights and are owned by individuals, companies or the federal government on behalf of First Nations. The Coal and Mineral Development Branch is responsible the administration of the Crown's mineral rights for metallic and industrial minerals and coal.

The mineral rights for coal, and metallic and industrial minerals are managed using a variety of agreements, depending on the specific substance and/or activity a client wishes to pursue (see Table 3). Each agreement type is defined and governed through the Alberta's *Mines and Minerals Act*, the Metallic and Industrial Minerals Tenure Regulation, and the Ammonite Shell Regulation. Fees and rentals are set out in the Mines and Minerals Administration Regulation

Agreement	Rights granted	Term	Application fee	Annual rental	Work requirements	
Metallic and Industrial Minerals Permit	The exclusive right to explore for MIM in the subsurface and remove samples for exploration purposes.	14 years, divided into 7 2-year work terms; not-renewable	$625	N/A	Term 1 Term 2-3 Term 4-7	$5/ha $10/ha $15/ha
Coal Lease	The exclusive right to win, work, and recover coal.	15 years; renewable	$625	$3.50/ha	N/A	
Metallic and Industrial Minerals Lease	The exclusive right to win, work, and recover metallic and industrial minerals.	15 years; renewable	$625	$3.50/ha	N/A	
Metallic and Industrial Minerals Licence	The non-exlusive right to win, work, and recover metallic and industrial minerals through placer mining (i.e. a sluice box).	5 year; not-renewable	$50	N/A	N/A	
Secondary Mineral Lease	The right to win, work, and recover metallic and industrial minerals through a secondary recovery operation.	5 years; renewable	$625	$3.50/ha	N/A	
Special Mineral Lease*/ Subsurface Reservoir Lease	The exclusive right to create caverns and store material in underground salt formations.	15 years; renewable	$625	$12.50/ha	N/A	
Ammonite Shell Agreement	The exclusive right to recover ammonite shell. Must be held in conjunction with an exemption from the *Historical Resources Act*.	15 year, 5 year renewal	$625	$3.50/ha	N/A	

Table 3. A table outlining the various coal, and metallic and industrial minerals agreements, along with the detail of each type of agreement. *Special Mineral Leases are one-off agreements between a lessee and the Crown; the details listed in this table are not exclusive, they are the most common.

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